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ABSTRACT

The purpose of this research was twofold: (1) to explore the effectiveness of the mass media as a drug education tool, and (2) to find ways to make televised education more effective in stimulating meaningful learning and attitude change. This study hypothesized that television instruction experienced in the context of a structured small group, would encourage people to choose that method of learning, and the interaction would result in more learning and a more positive attitude. The results of the study show that the mass medium of television is an effective way to disseminate information about and change attitudes toward drugs and drug use. The experimental condition of group viewing, however, did not show significant differences over individual viewing. (SJL)

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Attitude and Information Change Effected by Drug Education via Broadcast Television and Group Viewing

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INTRODUCTION

Sometimes it is important to report insignificant results along with significant results, especially when theory and common sense would indicate that a significant result should occur, and when the numbers involved are large enough. The purpose of this research was twofold: (1) to explore the effectiveness of the mass media as a drug education tool, and (2) to find ways to make televised education more effective in stimulating meaningful learning and attitude change. The results of the study show that the mass medium of television is an effective way to disseminate information about and change attitudes toward drugs and drug use. The experimental condition of group viewing, however, did not show significant differences over individual viewing.

The conditions of learning are many. The most usually agreed upon are: the attention of the learner to a stimulus situation; a response of some kind, resulting in feedback; reasonable contiguity existing between stimulus situation, the response, and feedback; practice; time for learning to be consolidated; and some arrangement for generalization of the learning to some new situation (c.f. Gagné, 1975).

One condition that is often overlooked because of its peculiarity to humans and its lack of application in all situations is the need for interpersonal human interaction. Research with educational television seems to indicate this as a distinct condition worthy of consideration.

It was hypothesized in this study that if television instruction could be experienced in the context of a structured, small group, (1) people would choose to do it that way, and (2) interaction would result in more

learning and a more positive attitude, both toward the content and toward the medium of instruction.

PREVIOUS RESEARCH

Testing for the effect of group viewing provides a convergence of two bodies of research related to the use of mass media for information dissemination and attitude change.

The first general body of research relates to the viewer's motivation for use of the mass media. A positive correlation appears to exist, for example, between motivation to use the mass media as information source and degree of interpersonal communication. A growing body of research indicates that the communicatory utility, i.e., the anticipated usefulness of the information gained via the media, motivates usage.

A second area of research important to the hypothesis of this study relates specifically to the use of the medium of television for instruction. Although as often as not determined effective in facilitating cognitive learning, television as a medium of instruction is almost always criticized by students for the lack of opportunity it provides for interaction, either with other students or with the instructor.

Let us look first at the interpersonal nature of mass media usage. Two general conclusions can be drawn from media usage as it correlates with interpersonal exchange: (1) people choose and use media for its communicatory utility, and (2) media influence and attitude change are related to interpersonal exchange. Although sometimes difficult to separate neatly into these categories, a number of studies in the last 35

years speak to the interpersonal nature of the mass media.

Group affiliation, for one example, affects choice of mass media. Viewers are not seen as an annonymous, spacially separated mass audience, but as a part of an "inter-communicating group" that promotes an interpersonal exchange of information as well as choice of mass media source of information (Riley and Flowerman, 1951). These groups are "functional" rather than "statistical," providing a setting for discussion and evaluation of mass media content (Schramm, 1954). The anticipated use of media content in social groups is one of three major reasons for use of television (Schramm, Lyle and Parker, 1961), the selection of media takes place according to social patterns (Freedson, 1953), and media are used differently depending on social integration needs (Riley and Riley, 1951). Choice and use of mass media can depend, for example, on the role one plays in an affiliation group. Opinion leaders expose themselves to more media than the general public (Lazarfeld, Berelson, Gaudet, 1948), may choose specialized areas of exposure (Katz, Lazarfeld, 1955), and strengthen their social position in a group by dispensing information gained through media exposure (Merton, 1949). Prestige and security within a group are also seen as motivating factors for choosing and using mass media (Waples, Berelson, Bradshaw, 1940; Wright, 1960; Berelson, 1949). A sub area of research which relates interpersonal use and motivation for seeking mass media information is represented by a number of studies specifically related to political information seeking and decision making. This body of research supports the above generalizations relating to the interpersonal use of the mass media (Berelson, Lazarsfeld and McPhee, 1954; Converse, 1962; Becker and Preston, 1969; Chafee and McLeod, 1967).

In general, then, although the initial source of information is not interpersonal, e.g., watching television, listening to the radio, reading a newspaper, the choice of media as well as the use of information gained through media is influenced by anticipated interpersonal interaction.

Although not as well established in the body of media research relating to communicatory utility, a second area of interpersonal effect lies in the area of attitude change. It appears, for example, that interpersonal exchange is especially sought out when the media information is related to either dramatic events (such as an assasination) or to minor news stories (Greenberg, 1964). The case has been made, in fact, that for mass media to influence attitude change, interpersonal interaction must occur:

> ...mass media have to deal with, first, gross categories, for example, "Mr. Homeowner," or "Mr. Car-buyer," or "fellow Americans"; second, media are locked into a structured sequence; and third, feedback is delayed. ...although there is no reason to suspect that the mass media are any better or worse in terms of defining objects or bringing objects to one's attention, the integral task of relating the object to the specific needs of an individual is left to interpersonal communication influence (McPhail, 1971).

The research discussed thus far has related to the interpersonal context of the mass media to use of the media for information dissemination and attitude change. A second body of research which relates to the hypothesis posed in this study is related to the interpersonal context of instructional television specifically. Interaction in the classroom, with teacher as well as with other students, has long been seen as a positive procedure in teaching and learning. Bruner, Erickson and Rogers, to name just a few, have illustrated the need for active student participation

in the learning environment. The use of television as a teaching medium, however, is hard pressed to meet this objective. A major criticism of televised instruction, even where talk-back systems are used, is the lack of opportunity for discussion (Schramm and Chu, 1967). It is interesting to note, however, that the discussion provided does not need to be with the instructor (Klapper, 1958). Research on the effectiveness of training films supports the effectiveness of active student response on learning. (Allen, 1957; Hoban, 1950; Miller, 1957). In addition, the studies of the Children's Television Workshop have demonstrated a high degree of correspondence between positive reactions in group viewing situations and ability to correctly answer questions on the content (Palmer, 1973). Earlier studies, while finding that subject matter acqusition is relatively unaffected by provision for group interaction (discussion), found that differences are reflected in such higher order criteria as critical thinking, reduction of stereotyping, and attitude change when discussion is provided (Macomber and Siegel, 1960).

According to research in the area of mass media in general, and instructional television in particular, it would appear that group viewing would enhance the effectiveness of the medium of television as a mass education tool, especially given the nature of the course content in this study. Drug education being an effort in attitude change as well as information enhancement, the focus of this course and resulting research on the interpersonal and interactive nature of the medium of television for instruction would seem particularly appropriate.

PROCEDURES

On the theoretical basis that group viewing would enhance televised instruction, the course was designed as a multi-media instructional experience. Each two hour class session included: (1) a television program, (2) group activities, and (3) live radio call-in.

The television programs were scripted to effect maximum viewer involvement, including conflict resolution, contrast, need for decision making, empathy, testing, identification, humor, etc. This approach was based in part on the research of the Children's Television Workshop which established a correlation between the activity eliciting potential of the medium and learning (Palmer, 1973). Viewers were treated not as passive onlookers, but as active participants in a process. The televised stimuli were presented in such a way as to encourage viewers to actively question, emphasize, seek out new information, aquire new skills, or change attitudes. The format of each program evolved from the nature of the material, including dramatic, documentary, artistic presentation, interview, on-location, and montage.

Each television program was followed by a one-hour period to be used for activities and discussion. This period of small group interaction was facilitated by a study guide handbook which gave a synopsis of each program, provided assignments, suggested small group activities and discussion questions, and provided specific readings tied to the content and message of each program (Wong, 1974).

The live call-in radio program followed the one-hour period of group activities. The program featured open telephone line communication between students and participants in the television program viewed earlier.

Evaluation was conducted on assigned activities, papers, and an open-book final examination of 250 multiple choice questions.

Instrumentation

Students were pre and post tested on: (1) drug information level, using the Drug Information Test, an instrument prepared for use in the California Drug Education training program (Cornacchia, Bentel, and Smith, 1973); (2) a "Critical Incidents" drug attitude test developed and used in previous drug education courses (Heistad, Zimmerman, and Wong, 1975); and (3) an attitude instrument directed at attitudes toward instructional television generally (MacLean, et. al.,1960).

In addition, participants were required to submit Production Feedback Questionnaires (PFQ) on the first, second, third, sixth and last programs of the ten program series. The PFQ is an instrument developed to measure affective response to discrete elements (production variables) within a program (Barbatsis, 1975). The PFQ allows Ss to pick from twelve possible responses the ones (any or all) that best describe their attitude to a particular production variable in a program. Six of these responses can best be described as positive (e.g., clear, curious, involved, etc.) and are paired with negative counterparts (e.g., confused, indifferent, bored, etc). In program one, subjects were asked to respond to eight separate entities in the program. In program ten they were asked to respond to four. This provides a total possible 96 responses to program one and 48 to program ten.

The number of possible positive to possible negative responses was always equal. Since data were available for Ss for both the first and the last program, the results of these two applications of the instrument are also compared.

Other data used in comparison of group and individual viewers are final exam scores and final grade.

Sample

The sample included all students registered for the course which was broadcast throughout the state of Minnesota on the state-wide educational network. The course was primarily advertised through educational institutions and thus, the great majority of the 312 students originally enrolled were teachers. Most students were taking the course for graduate credit.

To test the element under investigation, the facilitation of learning and attitude change through group interaction, students were encouraged to organize themselves into small groups. As a group, students watched the programs, discussed the content and message, carried out activities and assignments, and participated in the radio discussions. Students organized into groups on their own, and called or wrote to list themselves as a group. Ss who wanted to join a group but knew no one taking the course were given the names of others taking the course in their geographic area. It is important to point out that this procedure in no way approximates random assignment.

RESULTS

Information and Attitude Change: Drugs and Drug Use

There was a highly significant change in scores on the general Drug Information Test (see Table I). Overall this change represented a gain of almost five questions on a 41 item test. The test had no specific reference to course content except that it was about drugs and drug use.

Attitudes toward drugs and drug use also showed a significant change. Factor analysis of the "Critical Incidents" Drug Attitude test resulted in the emergence of two factors which were almost identical with factors that had emerged from use of the instrument in earlier drug education courses for teachers (Heistad, Zimmerman and Wong, 1975). Factor one is characterized at one pole by "punitive-authoritarian" responses and at the other pole by "constructive-rehabilitative" responses. Factor two is characterized by "active intervention" at one pole versus more passive "wait and see" attitudes at the other pole.

Change occurred on both factors as a result of the course. Students tended to shift away from punitive responses toward more "constructive-rehabilitative" responses, and away from active intervention responses to "wait and see" responses.

There was no differential change as a result of group membership, however. Data indicated that Ss meeting in groups began and ended more punitive than did their non-group counterparts, but the shift was not significantly different between the two types of viewers.

Table 1

Mean scores for all measurements of group vs. individual viewing

		Pre	Post	Change
Group Viewing n=86	Drug Information	24.01	29.52	5.51**
	Drug Attitudes			
	Factor 1	.24	-1.95	-2.19**
	Factor 2	1.82	1.20	.62**
	TV Attitudes	2.83	2.86	.03
	PFQ	2.93	7.14	4.21
	Final Exam		155.97***	
	Course Grade*		1.70	
Individual Viewing n=81	Drug Information	23.88	28.07	4.19**
	Drug Attitudes			
	Factor 1	-1.58	-3.38	-1.80**
	Factor 2	1.53	.96	.57**
	TV Attitudes	2.78	2.85	.07
	PFQ	3.69	8.52	4.83
	Final Exam		130.15***	
	Course Grade*		1.71	

*A=1, B=2, C=3, etc.
** P < .001
*** P < .001 t= -4.17, df=161

Attitude toward the production: group and individual viewers

As there was a different number of possible responses to program one and program ten, a ratio of positive to negative responses was taken for each program. Although a t test indicated no significant difference in gain scores between groups, there was no question that program ten received a much higher positive-negative response ratio.

Attitude toward television as a medium of instruction showed little change due to group or individual viewing.

CONCLUSIONS

Changes in attitudes as a result of drug education have generally been shown to be difficult to detect (Straton and Welch, 1971; Rand, et. al., 1970; Amendolara, 1973). The present results document changes in attitude and indicate the kind of changes that have taken place. More significantly they indicate that these changes can be brought about using the broadcast television medium. In fact, the changes in attitudes reported herein are a replication of those achieved by Heistad, Zimmerman and Wong (1975) in a drug education program using facilitated small groups as the delivery format.

Changes in attitude in both cases indicated that students tended to move away from immediate, punitive responses toward a "wait and see" or constructuve response attitude. One speculation about the cause of this change is that as people find out more about drugs, drug use and drug action, they break down the fear built up by the "scare tactic"

drug education of the past (Wong, 1976) and become more comfortable with the subject as a result of increased knowledge. This hypothesis would indicate increases in knowledge about drugs, drug use and abuse, and drug abusing people would be directly related to attitude change. A closer look can be taken at this hypothesis in a reanalysis of the present data by correlating information gain with attitude change. These analyses are planned.

One would hope that along with this decreased fear would come more thoughtfulness about drug use. Stuart's 1974 data indicate, however, that an initial offshoot of increased knowledge among adolescents is an increase in experimentation. There have been no assessments of what the long range results of such decrease in fear response to certain drugs will be. Most recent studies indicate, however, that every category of youthful drug use, with the exception of psychedelics, is either holding steady or is on the rise (O'Donnell, et. al.,1976).

In relationship to the second hypothesis of this study relating to the effect of group viewing on knowledge gain and attitude change, the results would appear to indicate that the interpersonal interaction provided by group viewing has no significant influence on the effectiveness of television as an instructional medium. Further study is needed before this position can be taken, however. Both the research data and intuition indicated that the people who got together and viewed the programs in small groups, and later discussed it together, would at least be happier about it than the people who viewed it alone. Why, then do our data indicate no differences? There are a number of possibilities for confounding the data, and too little control of variables, a common

problem in field research of this type.

One possibility, for example, is that people who registered as individual viewers did not, in fact, view the programs alone. Students were allowed to pick their viewing location. No restrictions were placed. Therefore, individual viewers (non-group viewers) could have been at home with a family, at a friend's house, in a bar, or virtually any other place where there was a television set. A number of other possibilities for these kinds of results exist, and they need to be explored in a more refined type of study.

The only statistically significant difference between the Experimental and the Control groups (group viewing and individual viewing respectively) was in the final exam score. A fifteen point difference between the means of the two groups favored the students meeting in groups. Whether these results represent greater learning or merely that the exams were parceled up among group members for answer gleaning is impossible to tell. Most probably the higher scores represent the latter. The mean final grades in the course were virtually identical for both the group and individual viewing conditions.

While the study did not support the hypotheses that group viewing would enhance learning and attitude change, it did clearly demonstrate the effectiveness of the use of mass media in disseminating information about and changing attitudes toward drugs and drug use. All viewers showed a significant increase in general knowledge as well as a significant change in attitude toward drugs and drug use.

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